SELF-COMPUTING CREDIT CARD TELEPHONE PAYSTATION METHOD AND SYSTEM

BACKGROUND OF THE INVENTION

A. Field of the Invention

The present invention relates generally to telephones; and more particularly, to a new and improved control method and system for a credit card telephone paystation.

B. Description of the Prior Art

Conventional credit card telephone paystations include a magnetic card reader for reading data encoded on a magnetic strip carried on a credit card, checking the validity of the data, and storing the data for use in establishing a telephone call. A telephone call is established from such conventional credit card telephone paystations by the paystation sequentially transmitting a calling number identification signal and the credit card data signal before transmitting a called number identification signal to the telephone company central office. Special central office equipment is required for collecting billing information for each call made with the credit card data signal. Additionally, the conventional credit card telephone paystations are limited to a small number of different types of credit cards of several major types that are commonly carried by telephone users.

It is highly desirable to provide a credit card telephone paystation capable of accepting many different types of major credit cards and that does not require special equipment at the telephone company central office for billing purposes.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a method and apparatus for credit card telephone paystations that overcome many of the disadvantages of existing systems.

It is another object of the present invention to provide a new and improved method and control system for processing a telephone call from a telephone paystation.

It is a further object of the present invention to provide a new and improved method and control system for processing a telephone call from a credit card telephone paystation that will accept a plurality of different types of credit cards.

It is still another object of the present invention to provide a new and improved method and control system for processing a telephone call from a credit card telephone paystation that identifies a valid credit card identification signal prior to enabling the call.

It is a still further object of the present invention to provide a new and improved method and control system for processing a telephone call from a credit card telephone paystation including detecting and storing call data with a credit card identification data and periodically transmitting the stored data to a central computer.

Briefly, in accordance with a preferred embodiment of the invention, there is provided a method and control system for use with a telephone paystation for detecting and storing call data with credit card identification data for later retrieval by a central computer. Magnetic encoded data on a credit card is read to produce a credit card identification signal that is determined to be valid prior to enabling a telephone call. Once the telephone call has been established, the credit card identification signal is stored with call data including the terminating or dialed telephone number, time and date of a detected call connection signal and the call duration. Periodically the stored data is transmitted to the central computer after a data request is received from the central computer.

DESCRIPTION OF THE DRAWING

These and other objects and advantages of the present invention will become readily apparent upojn consideration of the following detailed description and attached drawing, wherein:

FIG. **1** is a block diagram of a self computing credit card telephone paystation apparatus in accordance with the principles of the present invention;

FIG. **2** is a flow chart illustrating the logical steps performed by the paystation apparatus of FIG. **1** during a telephone call made from the pay station; and

FIG. **3** is a flow chart illustrating the logical steps performed by paystation apparatus of FIG. **1** in response to a data request transmitted by a host computer.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawing and initially to FIG. **1**, there is illustrated a block diagram of a self-computing credit card telephone paystation according to the present invention and designated by the reference numeral **10**. The telephone paystation **10** is capable of detecting and storing call information with credit card identification data during a given period, one day for example, and transmitting that information to a remote central computer upon receiving a data request from the central computer. The data requests may be made periodically at selected off-peak times increasing the efficiency of billing calls made from the paystation **10**, as compared to real time monitoring of each call by a central computer.

Conventional telephone components are used in the telephone paystation including a pushbutton dial **12** for generating multifrequency tones or dial pulses, a handset **14** having a transmitter and a receiver, a transmission network **16** that is connected via a hook switch **18** to telephone company lines L1 (ring) and L2 (tip), and a ring receiver **20** that is connected to the telephone company line L1 for receiving a ringing signal from the telephone company central office.

A microprocessor control system **22** and an associated memory **24** function to control the telephone paystation **10** and store the call information. The microprocessor control system **22** includes a microprocessor that may be an 8-bit microprocessor such as a Motorola 6803 microprocessor, however, various other commercially available microprocessor having standard capabilities can be used. The microprocessor control system is programmable to perform the functions described below and includes, in known manner, a clock or external crystal oscillator, line driver/buffer logic circuitry for coupling for data and control inputs and outputs from the microprocessor. The memory **24** may include an electrically eraserable programmable read only memory EEPROM that stores the system program and random access memory RAM that stores system parameer data and call information data.

The telephone paystation includes a magnetic card reader **26** for reading data encoded on a magnetic strip